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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY-DOCKET NO.	CONFIRMATION NO.
09/414,518	10/08/1999	BRAIN YANG	EM/YANG/5037	3398

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EXAMINER

GRIER, LAURA A

ART UNIT PAPER NUMBER

2644

DATE MAILED: 05/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/414,518

Applicant(s)

YANG ET AL.

Examiner

Laura A Grier

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. **Claims 5-12** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. **Claim 5** recites the limitation "said digital time-division signals" in "line 12". There is insufficient antecedent basis for this limitation in the claim.
4. **Claim 9** recites the limitation "said digital time-division signals" in "line 12". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Kaneko et al., U. S. Patent No. 4733591.

Regarding **claim 1**, the applicant's admitted prior art discloses a voice data generator for inputting a plurality of multi-channel control signals, and voice generator of receiving the signal (s) for output with a loudspeaker (figure 4). However, the applicant's admitted prior art fails to specifically

disclose the limitation regarding the control signal for activating a channel selector to generate a time-division signal (time-division technique), or a power amplifier. The examiner maintains that such a technique was well known in the art.

Regarding the time-division technique, in a similar field of endeavor, Kaneko et al. (Kaneko) discloses an electronic musical instrument. Kaneko's disclosure comprises means indicative on implementing a control signal for selecting a channel which includes a multiplexing means for providing time-division processing a music signal and voice signal, which indicative of the claimed limitations of the time-division technique and thus further discloses a power amplifier (figures 1 and 7, and col. 18, lines 19-51 and col. 29, lines 50-61), wherein the signal is outputted without demodulation.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of the applicant's admitted prior art by implementing the time-division technique for the purpose of reducing the size and complexity of such a system and enhancing the quality of the multi-channel audio output; and the power amplifier for the purpose of driving the output to the loudspeaker for greater audio quality and strength.

Regarding **claim 2**, the applicant's admitted prior art and Kaneko (hereafter, Kaneko) discloses everything claimed as applied above (see claim 1). The applicant's admitted prior discloses the plurality of channels to use voices signals which constitutes as speech signals; as well Kaneko discloses a musical instrument which used musical tone which constitutes as melody.

Regarding **claim 3**, Kaneko discloses everything claimed as applied above (see claim 1). Kaneko further discloses the claimed limitation in col. 18, lines 19-67, wherein in the plurality of states of a channel the data can be a logic "1" or "0".

Regarding **claim 4**, Kaneko discloses everything claimed as applied above (see claim 1). It was well known for a single source to provide multi-channel signals. And thus, it would have been obvious to one to of the ordinary skill in the art at time the invention was made to modify the invention of Kaneko by

implement means of enhancing and/or control the volume of the multiple channels when being output as a single output and/or mixed prior to output.

7. **Claims 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko.

Regarding **claim 5**, the applicant's admitted prior art discloses a voice data generator for inputting a plurality of multi-channel control signals, and voice generator of receiving the signal (s) for output with a loudspeaker (figure 4). However, the applicant's admitted prior art fails to specifically disclose the limitation regarding the control signal for activating a channel selector to generate a time-division signal (time-division technique), a power amplifier, and digital/analog converter. The examiner maintains that such a technique was well known in the art.

Regarding the time-division technique, in a similar field of endeavor, Kaneko et al. (Kaneko) discloses an electronic musical instrument. Kaneko's disclosure comprises means indicative on implementing a control signal for selecting a channel which includes a multiplexing means for providing time-division processing a music signal and voice signal, wherein the music signal contains envelope data, which indicative of the claimed limitations of the time-division technique and thus further discloses a power amplifier, and D/A conversion means (figures 1 and 7, and col. 18, lines 19-51 and col. 29, lines 50-61), wherein the signal is outputted without demodulation.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of the applicant's admitted prior art by implementing the time-division technique for the purpose of reducing the size and complexity of such a system and enhancing the quality of the multi-channel audio output; a D/A conversion means for converting the digital output of the time-division circuit to analog; and the power amplifier for the purpose of driving the output to the loudspeaker for greater audio quality and strength.

Regarding **claims 6-8**, Kaneko discloses everything claimed as applied above (see claim 5). The claimed limitations are rejected for the same reasons set forth in the rejection of claims 2-4 above.

8. **Claims 9-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko.

Regarding **claim 9**, the applicant's admitted prior art discloses a voice data generator for inputting a plurality of multi-channel control signals, and voice generator of receiving the signal (s) for output with a loudspeaker (figure 4). However, the applicant's admitted prior art fails to specifically disclose the limitation regarding the control signal for activating a channel selector to generate a time-division signal (time-division technique), or disclose the voice generator having a high-speed counter and a switch. The examiner maintains that such a technique was well known in the art.

Regarding the time-division technique, in a similar field of endeavor, Kaneko et al. (Kaneko) discloses an electronic musical instrument. Kaneko's disclosure comprises means indicative on implementing a control signal for selecting a channel which includes a multiplexing means for providing time-division processing a music signal and voice signal, wherein the music signal contains envelope data, which indicative of the claimed limitations of the time-division technique and thus further a high speed counter and switching means (figures 1 and 7, and col. 18, lines 19-51 and col. 29, lines 50-61), wherein the signal is outputted without demodulation.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of the applicant's admitted prior art by implementing the time-division technique for the purpose of reducing the size and complexity of such a system and enhancing the quality of the multi-channel audio output.

Regarding **claim 10-12**, Kaneko discloses everything claimed as applied above (see claim 9). The claimed limitations are rejected for the same reasons set forth in claims 2-4 above.

Citation of Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- Anderson et al., U. S. Patent No. 5406634, discloses an intelligent speaker unit of speaker system network.
- Yamaguchi et al., U. S. Patent No. 5825899, discloses an audio data processing apparatus.
- Von Ow et al., U. S. Patent No. 6330338, discloses process and device for mixing digital audio signals.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Art Unit: 2644

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

LAG *LAG*
May 6, 2002

Forester W. Isen
FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600